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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/057,530	01/25/2002	Paul L. Lagraff	LAG 0104 PUS	3015
7590 12/21/2004			EXAMINER	
Artz & Artz, P.C. 28333 Telegraph Road, Ste. 250 Southfield, MI 48304			RAEVIS, ROBERT R	
			ART UNIT	PAPER NUMBER
			2856	

DATE MAILED: 12/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/057,530

Applicant(s)

LAGRAFF ET AL.

Examiner

Robert R. Raevis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 20-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 20-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

Claims 35-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 35, is this claim limited to include a slide? The phrase "for holding a slide" (line 3) suggests not. However, the phrase "adjacent said slide" (line 5) suggest yes. The two quoted passages are inconsistent to the extent that it's unclear if their apparatus includes a slide.

Claims 35,37-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Berger.

Berger teaches an impaction sampler, including: housing 14, retaining mechanism 34, inlet 54, aperture 16 in the housing that permits air to flow around (note arrows 40), and outlet 30 that is connected to a remote vacuum source.

As to claims 35,37-39, the mechanism 35 is sized such that it could hold a slide.

Claims 35,37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berger in view of Chow et al.

Berger does not use the term "slide" to describe the plate 38.

As to claims 35,37-39, Chow teaches (col. 7, lines 32-34) that a silicon wafer may be called a slide, suggestive of calling Berger's silicon plate a slide.

Claims 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berger as applied to claim 35 above, and further in view of either Langer or Marpel '475.

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As to claim 39, it would have been obvious to employ either Langer's laminar flow producing aperture 16 or Marpel's nozzle 20 in place of Berger's inlet as either Langer or Marpel teach that these two differently (from Berger) shaped apertures will successfully allow for a sampling of particles in an impactor.

As to claim 40, Marpel's nozzle 20 provides for both venture and laminar sections.

Claims 41,42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berger as applied to claim 35 above, and further in view of Smith.

As to claims 41,42, it would have been obvious to employ a slit in place of Berger's inlet as Smith teaches (Figure 2) that a rectangular slit will successfully allow for sampling of particles in an impactor.

Claims 8, 9, 20, 21, 22, 23, 33, 25, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith, in view of Marpel '475.

Smith teaches a method of sampling, including: providing a greased slide 35, loading the slide, assembling a top portion 22 of the sampler to a base 10 portion, connecting a vacuum source to an outlet (region on both sides of the slide, or even an outlet of the housing) of the sampler, drawing air into an inlet 23, accelerating the air via the inlet, and directing air to the slide.

Smith does not clearly employ a "laminar portion" in its inlet.

As to claims 8, 9, 20, 21, 22, 23, 33, 25, 26, it would have been obvious to employ Marpel's nozzle 20 in place of Smith's slit as Marpel teaches that this differently (from Smith) shaped aperture will successfully allow for a sampling of particles in an

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impactor. In addition, either the passage around beam 4 (and immediately there below) may be deemed to be an outlet, or Marpel teaches (Figure 1) that a pump may be exteriorly located from the housing to allow for an increased ease of replacing vacuum sources. Note that the nozzle of Marpel has a tapered inlet immediately above the laminar section, and that tapering results in acceleration.

As to claims 20, 21, note Marpel's "rectangular" (col. 4, line 17) teaching of non-circular, and that the distance from the aperture 20 to the impactor surface is "elongated" relative to the width of the rectangular inlet aperture.

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Marpel as applied to claim 8 above, and further in view of Berger.

As to claims 10 and 11, Berger refers (col. 5, lines 28+) to the need for a flow stability and pressure differential, suggestive of calibration for impact particle sampling.

Claims 27, 31, 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith.

Smith teaches a bio impactation sampling device, including: housing 10 with two 22, 10/4 portions, where portion 22 releasably engages the portion 10, a slide in communication with an inlet 23, a recessed portion 35 in the housing to receive the slide, the housing having a bore formed (between beam and interior walls of portion 10) adjacent to the recessed portion, the bore sized such that air can flow around the slide into an outlet of that same bore, a vacuum source 18 that is located well below the bore (as view in Figure 3, where the source 18 is below beam 4), the inlet passageway 23 having an outer inlet opening larger than the inner inlet opening.

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As to claim 27, the source may be seen to be remote from the outlet as the source is not structurally connected to the walls that define the outlet. The source is spaced from the outlet, and thus is remote to that extent.

Claims 28,29,30,33,34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Marpel.

As to claims 28,29,30, it would have been obvious to employ a cap for Smith's top as Marpel teaches use of a sealing cap 13A to couple an impaction plate to an inlet opening.

As to claim 33,34, Marpel teaches use of an opening that has a venturi portion and laminar portion 20 to draw a sample into an impactor, suggestive of use of both portion in Smith.

Claims 27-32,34,35,36,37,38,39,40, are rejected under 35 U.S.C. 103(a) as being unpatentable over Marpel in view of Smith.

Marpel teaches an impaction sampling device, including: housing 13A,14A/17 with releasable portions, plate 27 in communication with inlet 20, recessed portion 28 to receive the plate, bore 29,33 adjacent the recessed portion to draw air around the plate and into an outlet 24A, remote vacuum 25.

The plate is not called a slide.

As to claims 27-32,34,35,36,37,38,39,40, it would have been obvious to employ a slide for Marpel's plate as Smith teaches use of a slide to take samples because (col. 6, lines 20-30) slides are readily accepted by laboratory microscopes to check the samples.

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Claims 1,2,3,4,5,6,7, are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of either McFarland et al or Burton et al, and further in view of Marpel.

As to claims 1,2,5,7, it would have been obvious to employ McFarland's venturi/laminar (Figure 3), slit (Figure 2) aperture for Smith's inlet because McFarland teaches that such an opening may permit for successfully passing particulate samples to an impaction surface. Note that the dashed lines in Figure 3 of McFarland indicate the sample passing vertically downward, suggestive that the lower portion of the opening has a laminar section. In the alternative, it would have been obvious to employ Burton's venturi 30/laminar 32/slit 31 (Figure 1) aperture for Smith's inlet because Burton teaches that such an opening may permit for successfully passing particulate samples in an impaction sampler. In addition, it would have been obvious to employ a cap for Smith's top as Marpel teaches use of a sealing cap 13A to couple an impaction plate to an inlet opening.

As to claims 2,3,4, see McFarland, Figure 2.

As to claim 6, note Marpel's o-ring 18 that seals a cap on the base, suggestive of use of o-rings for sealing.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert R. Raevs whose telephone number is 571-272-2204. The examiner can normally be reached on Monday to Friday from 6:30am to 4pm. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ROVD  
RAEJ